

REMARKS

The Office Action dated August 29, 2007, has been received and carefully noted. The above amendments to the specification and claims, and the following remarks, are submitted as a full and complete response thereto.

By this Response, claims 1 and 6 have been amended to more particularly point out and distinctly claim the subject matter of the present invention. The Specification has been amended to clarify reference to the related priority document, Japanese Patent Application No. 2003-095484, filed on March 31, 2003. No new matter has been added. Support for the above amendments is provided in the Specification at least on page 14, line 30, to page 16, line 19. Accordingly, claims 1-10 are currently pending, which claims 1 and 6 are independent claims.

In view of the above amendments and the following remarks, Applicants respectfully requests reconsideration and timely withdrawal of the pending objections to the Information Disclosure Statement and the pending rejections to the claims for the reasons discussed below.

Information Disclosure Statement

The Office Action objected to the listing of references in the Specification as not being a proper Information Disclosure Statement (IDS) pursuant to 37 C.F.R. §1.98(b).

Applicants respectfully submit that the references cited in the Specification were properly submitted in an IDS pursuant to 37 C.F.R. §1.98(b) on June 23, 2004.

Specifically, both Japanese Patent No. 3176701, on page 1 of the Specification, and Japanese Patent Application No. 2002-326173, on page 14 of the Specification, were submitted in the IDS, filed on June 23, 2004 (See Appendix A). Applicants note that Japanese Patent No. 3176701, was listed on the IDS as “JP 05-297940,” which is the publication number for the reference.

Therefore, Applicants respectfully submit that the references listed in the Specification have been properly submitted in an IDS pursuant to the requirements of 37 C.F.R. §1.98(b).

Claim Rejections under 35 U.S.C. §102(b)

The Office Action rejected claims 1-10 under 35 U.S.C. §102(b) as allegedly anticipated by “Using Stereo Vision to Pursue Moving Agents with a Mobile Robot,” Eric Huber and David Kortenkamp, IEEE International Conference on Robotics and Automation, 1995, pgs. 2340-2346 (“Huber”). Applicants respectfully submit that the claims recite subject matter that is neither disclosed nor suggested in Huber.

Claim 1, upon which claims 2-5 are dependent, recites a system for controlling a biped robot. The biped robot includes a body and two legs each connected to the body. The system includes a plurality of cameras mounted on the robot and capturing a stereoscopic image around the robot, captured image analyzer inputting and analyzing the image captured by the cameras, and moving object detector detecting presence of a moving object around the robot based on the analyzed image and if detected, calculating

a position and an angle of the moving object relative to the robot. The system also includes stop motion determinator determining whether a motion of the robot needs to be stopped based on the detected position and angle of the moving object relative to the robot, and robot motion controller controlling the robot to stop the motion when the motion of the robot is determined to be stopped, such that a distance of travel of the robot from the capture of image to the stopping of motion of the robot falls within a predetermined distance. The stop motion determinator is further configured to set a processing period based upon an amount of time from the capture of the image to the stopping of motion of the robot, the processing period set so that the distance of travel of the robot during the processing period does not exceed a difference of the predetermined distance and a distance traveled by two walking steps of the legs of the robot.

Claim 6, upon which claims 7-10 are dependent, recites a method of controlling a biped robot comprising a body and two legs each connected to the body. The method includes capturing a stereoscopic image around the robot, inputting and analyzing the captured image, and detecting presence of a moving object around the robot based on the analyzed image and if detected, calculating a position and an angle of the moving object relative to the robot. The method also includes determining whether a motion of the robot needs to be stopped based on the detected position and angle of the moving object relative to the robot, controlling the robot to stop the motion when the motion of the robot is determined to be stopped, such that a distance of travel of the robot from the capture of image to the stopping of motion of the robot falls within a predetermined distance, and

setting a processing period based upon an amount of time from the capturing of the image to the controlling the robot to stop the motion. The processing period is set so that the distance of travel of the robot during the processing period does not exceed a difference of the predetermined distance and a distance traveled by two walking steps of the legs of the robot.

As will be discussed below, Huber fails to disclose or suggest every feature recited in claims 1-10, and therefore fails to provide the features of the claims discussed above.

Huber is directed to a robot and a proximity space method as a means for performing real-time, behavior-based control of visual gaze for a robot. The method is integrated with robot motion using an intelligent control architecture that can automatically reconfigure the robot's behaviors in response to environmental changes (Huber, Abstract).

Applicants respectfully submit that Huber fails to disclose or suggest every feature recited in claim 1, and similarly recited in claim 6. Specifically, Huber fails to disclose or suggest, at least, "wherein the stop motion determinator is further configured to set a processing period based upon an amount of time from the capture of the image to the stopping of motion of the robot, the processing period set so that the distance of travel of the robot during the processing period does not exceed a difference of the predetermined distance and a distance traveled by two walking steps of the legs of the robot" as recited in claim 1, and similarly recited in claim 6.

Rather, Huber discloses a TRACK-AGENT which takes input from the VISION skill and generates goal positions and velocities for the robot based on the location, distance, and speed of the agent being pursued. A FIND-FREE-DIRECTION skill takes the goal and speed and, using a sonar map of obstacles, determines a free direction of travel. A DRIVE-AND-STEER skill then takes the free direction and desired speed and computes the robot's drive and steer velocities. This cycle continues, with the VISION skill producing a new agent location four times a second. Huber further discloses laboratory testing of the robot at a maximum speed of 0.4 meters/second and the ability to maintain the robot at a fixed distance from the agent, e.g. two meters (Huber, page 2344-45, sections 3, 3.1, and 3.2).

However, Huber fails to disclose or suggest the TRACK-AGENT, or any other structural element, configured to set a processing period based upon an amount of time from the capture of the image to the stopping of motion of the robot, the processing period set so that the distance of travel of the robot during the processing period does not exceed a difference of the predetermined distance and a distance traveled by two walking steps of the legs of the robot" as recited in claim 1, and similarly recited in claim 6. Rather, Huber discloses that the distance and velocity that the robot travels and the control of stopping the robot is based on the location, distance, and speed of the agent being pursued; therefore, it would not have been inherent from the stopping algorithm of Huber "to set a processing period...so that the distance of travel of the robot during the processing period does not exceed a difference of the predetermined distance and a

distance traveled by two walking steps of the legs of the robot” as recited in claim 1, and similarly recited in claim 6 (emphasis added).

Accordingly, Huber fails to disclose or suggest every feature recited in claim 1, and similarly recited in claim 6. Claims 2-5 depend from claim 1. Claims 7-10 depend from claim 6. Accordingly, claims 2-5 and 7-10 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1-10 under 35 U.S.C. §102(b), and respectfully submit that claims 1 and 6, and the claims that depend therefrom, are now in condition for allowance.

CONCLUSION

In conclusion, Applicants respectfully submit that Huber fails to disclose or suggest every feature recited in claims 1-10. The distinctions previously noted are more than sufficient to render the claimed invention unanticipated. It is therefore respectfully requested that all of claims 1-10 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, Applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



Brad Y. Chin
Registration No. 52,738

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

BYC:dlh

Enclosure: Copy of Information Disclosure Statement, filed on June 23, 2004